

### **REMARKS**

This Application has been carefully reviewed in light of the Office Action dated January 22, 2010 (“*Office Action*”). In the Office Action, Claims 1-20 are pending and rejected. Applicants have amended Claims 1, 4, 5, 8, and 9. Applicants submit that no new matter is added by these amendments. Applicants respectfully request reconsideration and favorable action in this case.

### **Claim Objections**

The *Office Action* rejects Claim 9 due to informalities. Specifically, the Examiner points out that “it is unclear as to which object the term ‘the first object’ is referring.” (*Office Action*, page 2). Applicants appreciate the Examiner bringing this to Applicants’ attention. Applicants have amended Claim 9 to address the issue identified by the Examiner. For at least these reasons, Applicants respectfully request that the objection to Claim 9 be withdrawn.

### **Section 102 Rejections**

The Office Action rejects Claims 1-3, 5-7, and 13-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0039738 issued to Cutlip (“*Cutlip*”). Additionally, the Office Action rejects Claims 1-3 and 5-7 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0002955 issued to Gadbois et al. (“*Gadbois*”). Applicants respectfully request reconsideration for the reasons discussed below.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added); M.P.E.P. ch. 2131. “The *identical invention* must be shown in as *complete detail as contained* in the . . . claim .” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989) (emphasis added); see also M.P.E.P. ch. 2131. In addition, “[t]he elements must be arranged as required by the claim.” *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); M.P.E.P. ch. 2131.

The Federal Circuit recently clarified this standard in *Net Moneyin, Inc. v. Verisign, Inc.*, 2008 WL 4614511 (Fed. Cir. 2008). In *Net Moneyin*, the Federal Circuit held that a finding of anticipation under 35 U.S.C. § 102 is proper only when a “reference discloses within the four corners of the document not only all of the limitations claimed but also ***all of the limitations arranged or combined in the same way*** as recited in the claim.” *Net Moneyin* at \*10 (emphasis added). The prior art reference must “***clearly and unequivocally*** disclose the claimed invention ... ***without any need for picking, choosing, and combining various disclosures not directly related to each other by*** the teachings of the cited reference.” *Id.* (emphasis added, internal typographical notations omitted).

Independent Claim 1 of the present Application, as amended, recites:

A method for use in a Web Services system having complex UDDI object(s), the method comprising:

providing a database for storing at least one directory parent object within a first object class, the at least one directory parent object storing a plurality of attributes, wherein the at least one directory parent object stores at least one unique attribute that occurs only once in the at least one directory parent object and a repeating attribute that occurs more than once in the at least one directory parent object;

using a processor in communication with the database to create a first directory child object for storing a first value associated with the repeating attribute, the first directory child object also within the first object class;

using the processor to remove the repeating attribute from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes; and

storing, in the database, the value associated with the repeating attribute in the first directory child object.

Neither *Cutlip* nor *Gadbois* disclose, either expressly or inherently, each and every element of the claims.

1. **Neither reference discloses a parent object that stores both “at least one unique attribute that occurs only once in the at least one directory parent object and a repeating attribute that occurs more than once in the at least one directory parent object**

For example, it continues to be Applicants’ position that neither *Cutlip* nor *Gadbois* disclose, teach, or suggest a directory parent object that stores both “at least one unique attribute that occurs only once in the at least one directory parent object and a repeating

attribute that occurs more than once in the at least one directory parent object,” as recited in Claim 1.

As previously shown by Applicants, *Cutlip* merely discloses that a “UDDI registry specification defines several core data type structures, including “businessEntity”, “businessService”, “bindingTemplate”, and “tModel.”” (*Cutlip*, Page 3, paragraph 40). The hierarchical arrangement illustrated in Figure 2 of *Cutlip* includes businessEntity 200, businessService 210, binding Template 220, and tModel 230 arranged under a businessEntity. (*Cutlip*; Figure 2). Figure 3 “is a Unified Modeling Language (“UML”) diagram” providing “a precise [textual] description of the relationship between” these items. (*Cutlip*, Page 3, paragraph 42). In the *Office Action*, the Examiner points to Figure 3 and states that “*Cutlip* teaches a directory parent object business entity 320, which has 1 to many discover URLs, one to many contacts and zero to many business services. (*Office Action*, page 9). However, the cited Figure of *Cutlip* merely identifies that there is at least one (and may be many) Discovery URL object being associated with the Business Entity object 320. (*Office Action*, Figure 3; Page 4, paragraph 42). Similarly, there are at least one (and may be many) Contacts objects being associated with a Business Entity 320. (*Office Action*, Figure 3; Page 4, paragraph 42). In contrast there may be zero to many Business Service objects being associated with Business Entity 320. (*Office Action*, Figure 3; Page 4, paragraph 42). However, the relationship between the objects does not speak to the attributes that are stored in the Business Entity object, which the Examiner has identified as the parent object. (*Office Action*, pages 3 and 9). With regard to the BusinessEntity, *Cutlip* merely discloses that the provides “information about the entity publishing services in a registry, such as its name and contact information.” (*Cutlip*, paragraphs 40 and 45). Thus, it appears that to the extent that the BusinessEntity object stores anything it is the business entity’s name and contact information or other identifier. Even if the business entity’s name and contact information are considered unique attributes, there is no disclosure in *Cutlip* that the Business Entity object also stores a “**repeating attribute** that occurs more than once in the at least one directory parent object,” as recited in Claim 1. Further, the attributes of the objects that are beneath the Business Entity object in the hierarchical structure of *Cutlip* (i.e., Discovery URL, Contact, Business Service, Binding Template, and Tmodel) do not have any bearing on the attributes stored in the Business Entity object. Accordingly, *Cutlip* does not disclose, teach or suggest a directory parent object that stores both “at least one unique attribute that

occurs only once in the at least one directory parent object and a repeating attribute that occurs more than once in the at least one directory parent object,” as recited in Claim 1.

The claim elements are also absent from the disclosure of *Gadbois*. As previously shown by Applicants, *Gadbois* merely discloses a hierarchical structure in which each organization is represented by a node and includes sub-nodes for further information. In the *Office Action*, the Examiner points to business service nodes 242 as being analogous to Applicants’ parent object and business service1 243 and business service2 242 as being analogous to Applicants’ child objects. (*Office Action*, page 9). Even to the extent that one considers the identified nodes of *Gadbois* as being analogous to Applicants’ objects, there is not disclosure in *Gadbois* that the business service node 242 stores both “at least one unique attribute that occurs only once in the at least one directory parent object and a repeating attribute that occurs more than once in the at least one directory parent object,” as recited in Claim 1.

In fact, *Gadbois* merely discloses that “an Organization1 is represented at node 22, and Organization2 is represented at node 224.” (*Gadbois*, page 3, paragraph 27). “Each organization node is typically coupled to a number of interior sub-nodes which contain further information, or links to further information, regarding the respective organization.” (*Gadbois*, page 3, paragraph 28). Thus, the businessService 1 node and the businessService 2 node provide additional information about the various and different business services offered by Organization 1. There is no other disclosure of the contents of these nodes. Additionally, the attributes of the objects that are beneath the Business Services object in the hierarchical structure of *Gadbois* (i.e., BusinessService1 and BusinessService2) do not have any bearing on the attributes stored in the BusinessServices object. Accordingly, *Gadbois* does not disclose, teach or suggest a directory parent object that stores both “at least one unique attribute that occurs only once in the at least one directory parent object and a repeating attribute that occurs more than once in the at least one directory parent object,” as recited in Claim 1.

For at least these reasons, Applicants respectfully request reconsideration and allowance of independent Claim 1, together with Claims 2-3 that depend on Claim 1. For analogous reasons, Applicants respectfully request reconsideration and allowance of independent Claim 5, together with Claims 6-7 that depend on Claim 5.

2. **Neither reference discloses “using the processor to remove the repeating attribute from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes”**

As another example, it continues to be Applicants’ position that neither *Cutlip* nor *Gadbois* disclose, teach, or suggest “using the processor to remove the repeating attribute from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes,” as recited in Claim 1. In the *Office action*, the Examiner states that “[b]oth *Cutlip* and *Gadbois* teach that repeating attributes are moved into child objects and thus the directory parent object is left with only unique attributes.” (*Office Action*, page 10). Applicants respectfully disagree.

Rather, and as previously shown by Applicants, *Cutlip* merely discloses a particular hierarchical structure that includes “businessEntity”, “businessService”, “bindingTemplate”, and “tModel.”” (*Cutlip*, Page 3, paragraph 40). Specifically, “[a] particular businessEntity instance may offer (i.e., publish) a number of business services in the registry, where each service is identified using an instance of the businessService data type 210.” (*Cutlip*, Page 3, paragraph 40). “Each businessService instance [210] has an instance of bindingTemplate data type 220” and that “[a]n instance of bindingTemplate may reference on or more instances of tModel data type 230.” (*Cutlip*, Page 3, paragraph 40). Thus, *Cutlip* discloses a hierarchical arrangement such as that illustrated in Figures 2 and 3.

In the *Office Action*, the Examiner states that “*Cutlip* shows (Fig. 10) that a business entity (i.e., parent object has three attributes (Dun and Bradstreet Number, US Tax Identifier, and NAICS classification), which are all unique attributes. The other attributes are all represented as child objects having one to many or zero to many relationships with the business entity (Fig. 3).” (*Office Action*, page 10). Even to the extent that this is true, there is no disclosure in *Cutlip* that the data stored in the child objects below the Business Entity object (i.e., DiscoveryURL object, Contact object, BusinessService object, BindingTemplate object, and tModel object) were originally stored in the Business Entity object 320 and then removed from that object to be placed in the child objects. *Cutlip* discloses one example hierarchy and does not disclose that any modification to it has occurred to result in the hierarchy depicted in Figures 2 and 3. Again, the attributes of the objects that are beneath the Business Entity object in the hierarchical structure of *Cutlip* (i.e., Discovery URL, Contact, Business Service, Binding Template, and Tmodel) do not have any bearing on the attributes

stored in the Business Entity object before or after the creation of the child objects. In fact, there is no indication that the Business Entity object has undergone any modification by removing repeating attributes. Accordingly, *Cutlip* does not disclose, teach or suggest a directory parent object that stores both “using the processor to remove the repeating attribute from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes,” as recited in Claim 1.

The claim elements are also absent from the disclosure of *Gadbois*. As previously shown by Applicants, *Gadbois* merely discloses a hierarchical structure in which each organization is represented by a node and includes sub-nodes for further information. In the *Office Action*, the Examiner points to business service nodes 242 as being analogous to Applicants’ parent object and business service1 243 and business service2 242 as being analogous to Applicants’ child objects. (*Office Action*, page 9). Even to the extent that one considers the identified nodes of *Gadbois* as being analogous to Applicants’ objects, there is not disclosure in *Gadbois* of performing an operational step that “using the processor to remove the repeating attribute from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes,” as recited in Claim 1.

In fact, *Gadbois* merely discloses that “an Organization1 is represented at node 22, and Organization2 is represented at node 224.” (*Gadbois*, page 3, paragraph 27). “Each organization node is typically coupled to a number of interior sub-nodes which contain further information, or links to further information, regarding the respective organization.” (*Gadbois*, page 3, paragraph 28). Thus, the businessService 1 node and the businessService 2 node provide additional information about the various and different business services offered by Organization 1. There is no other disclosure of the contents of these nodes. Like *Cutlip*, *Gadbois* discloses one example hierarchy and does not disclose that any modification to it has occurred to result in the hierarchy depicted in Figures 2 and 3. Again, the attributes of the objects that are beneath the Business Services object in the hierarchical structure of *Gadbois* (i.e., BusinessService1 and BusinessService2) do not have any bearing on the attributes stored in the BusinessServices object before or after the creation of the child objects. In fact, there is no indication that the BusinessServices object has undergone any modification by removing repeating attributes. Accordingly, *Gadbois* does not disclose, teach or suggest a directory parent object that stores both “using the processor to remove the repeating attribute

from the at least one directory parent object such that the at least one directory parent object comprises only unique attributes,” as recited in Claim 1.

For at least these additional reasons, Applicants respectfully request reconsideration and allowance of independent Claim 1, together with Claims 2-3 that depend on Claim 1. For analogous reasons, Applicants respectfully request reconsideration and allowance of independent Claim 5, together with Claims 6-7 that depend on Claim 5.

### **Section 103 Rejections**

The Office Action rejects Claims 4 and 8 under 35 U.S.C. §103(a) as being unpatentable *Gadbois* in view of U.S. Patent No. 5,956,499 issued to Colgan (“*Colgan*”), and further in view of U.S. Patent No. 7,054,858 issued to Sutherland (“*Sutherland*”). Applicants respectfully request reconsideration for the reasons discussed below.

Independent Claim 4 of the present Application, as amended, recites:

A computer-implemented method of flattening a hierarchy in a Web Services arrangement, the method comprising:

providing a database for storing a hierarchical structure of a plurality of UDDI objects, the plurality of objects comprising at least one parent object, at least a first child object, and at least a second child object;

using a processor in communication with the database to at most a ‘one-to-one’ relationship between the first child object and the second child object, wherein the first child object and the second child object are at a same hierarchical level within the hierarchical structure; and

using the processor to remove a portion of the hierarchical structure having the at most ‘one-to-one’ relationship by moving a content of the first child object into the second child object at the same hierarchical level within the hierarchical structure.

The cited references do not disclose, either expressly or inherently, each and every element of Claim 4.

1. **The references do not disclose “using a processor in communication with the database to at most a ‘one-to-one’ relationship between the first child object and the second child object, wherein the first child object and the second child object are at a same hierarchical level within the hierarchical structure”**

For example, the proposed *Gadbois-Colgan-Sutherland* combination does not disclose, teach, or suggest “using a processor in communication with the database to at most a ‘one-to-one’ relationship between the first child object and the second child object, wherein the first child object and the second child object are at a same hierarchical level within the hierarchical structure,” as recited in Applicants’ Claim 4. On page 7 of the previous *Office Action* delivered on September 8, 2009), the Examiner acknowledged that *Gadbois* does not disclose identifying the one-to-one relationship. However, in the current *Office Action*, the Examiner relies upon Figure 2 of *Gadbois* for disclosure of the recited claim element. Applicants respectfully disagree.

As previously shown by Applicants, *Gadbois* merely discloses a hierarchical structure in which each organization is represented by a node and includes sub-nodes for further information. (*Gadbois*, Figure 2). In the *Office Action*, the Examiner points to Organization2 node 224 and business services node 272 as demonstrating a one-to-one relationship. (*Office Action*, page 9). However, the two identified nodes are not at the same hierarchical level within the hierarchical structure. Further, and more importantly, the Examiner has not identified any portion of *Gadbois* that actually discloses “**using a processor to identify**” the relationship between the two objects. Finally, there is no disclosure in *Gadbois* of specifically identifying “at most a ‘one-to-one’ relationship.” As such, *Gadbois* and the proposed *Gadbois-Colgan-Sutherland* combination does not disclose, teach, or suggest “using a processor in communication with the database to at most a ‘one-to-one’ relationship between the first child object and the second child object, wherein the first child object and the second child object are at a same hierarchical level within the hierarchical structure,” as recited in Applicants’ Claim 4.

For at least these reasons, Applicants respectfully request reconsideration and allowance of independent Claim 4. For analogous reasons, Applicants also request reconsideration and allowance of independent Claim 8.



2. **The references do not disclose “using the processor to remove a portion of the hierarchical structure having the at most ‘one-to-one’ relationship by moving a content of the first child object into the second child object at the same hierarchical level within the hierarchical structure”**

As another example, the proposed *Gadbois-Colgan-Sutherland* combination does not disclose, teach, or suggest “using the processor to remove a portion of the hierarchical structure having the at most ‘one-to-one’ relationship by moving a content of the first child object into the second child object at the same hierarchical level within the hierarchical structure,” as recited in Applicants’ amended Claim 4. In the *Office Action*, the Examiner relies upon *Colgan* for disclosure of removing a portion of the hierarchical structure and relies upon *Sutherland* for disclosure that the second object is a child object. (*Office Action*, pages 7-8). Applicants respectfully disagree.

*Colgan* actually discloses that a physical model 22 “contains a large number of occurs type entities” that “can make the physical model 22 difficult to work with.” (*Colgan*, Column 2, lines 47-54). *Colgan* suggests “denormalizing these occurs entities back into the parent entity.” (*Colgan*, Column 2, lines 55-58). “This results in the attribute of the occurs entity being transferred to the parent entity.” (*Colgan*, Column 2, lines 58-59). Thus, in contrast to Applicants’ claim which requires moving the content of a child object into a different child object, *Colgan* merely discloses moving a child object into a parent object. There is no disclosure in *Colgan* of moving the content of a child object into another child object.

*Sutherland*, which merely discloses “related objects [that] include nested objects and/or many-to-many relationship objects” (*Sutherland*, Abstract), does not cure these deficiencies of *Colgan*. Figure 1A of *Sutherland* indicates that the Order object may have customer and orderdetail objects below the Order object at a first hierarchical level beneath the Order object. Figure 1A of *Sutherland* further indicates that the Customer object may have Address and Phone# objects below the Customer object at a second hierarchical level and that the Orderdetail object may have an item object below the Orderdetail object at the second hierarchical level. Thus, *Sutherland* merely indicates a hierarchical structure, in which certain objects are nested beneath other objects. There is no disclosure in *Sutherland* of the removal of any portion of the nested objects. Rather, *Sutherland* relates to the retrieval queries for retrieving a collection of target objects. (*Sutherland*, Abstract). Accordingly,

even when considered in combination, the disclosures of *Colgan* and *Sutherland* merely disclose that a hierarchical structure may include parent entities and child entities and that a child entity may be transferred to the parent entity. Neither reference nor their proposed combination disclose, teach, or suggest “remove[ing] a portion of the hierarchical structure having the at most ‘one-to-one’ relationship by moving a content of the first child object into the second child object at the same hierarchical level within the hierarchical structure,” as recited in Applicants’ amended Claim 4.

For at least these reasons, Applicants respectfully request reconsideration and allowance of independent Claim 4. For analogous reasons, Applicants also request reconsideration and allowance of independent Claim 8.

**CONCLUSION**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other apparent reasons, Applicants respectfully request full allowance of all pending Claims.

If the Examiner feels that a telephone conference or an interview would advance prosecution of this Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

Applicants believe no fee is due. However, should there be a fee discrepancy, the Commissioner is hereby authorized to charge any required fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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